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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,534	12/30/2003	Danlu Zhang	030600	8874

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QUALCOMM INCORPORATED
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EXAMINER

PEREZ, ANGELICA

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/26/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/26/2007.

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Office Action Summary

Application No.

10/749,534

Applicant(s)

ZHANG ET AL.

Examiner

Perez M. Angelica

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 16-29 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>05/20/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 29 is rejected under 35 U.S.C. 101 because 'a memory device' should read "computer readable memory". For purposes of examination, claim 28 will be considered provisionally *rejected*.

Claim Objections

3. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 14 and 15 depend on claim 13; therefore, they are objected for the same reasons as set forth above.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 12, 16, 25 and 27 are rejected under 35 U.S.C. 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed. Evidence of concealment of the best mode is based upon. The 30-50% range is not found in the specifications; in addition, the applicant does not show any evidence such as lab tests,

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literature or other data that can shows that a 30-50% range is an improvement over the prior art.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Prasad et al.

(Prasad, WO 02/067619 A2).

Regarding claim 1, Prasad teaches of an apparatus for a wireless communication system (page 5, lines 9-12; e.g., “node” figure 2), comprising: means for determining available resources in the wireless communication system (page 5, lines 9-12, where the determination requires means for its realization); and means for determining an admission of a flow (page 5, lines 9-12).

Regarding claim 2, Prasad teaches all the limitations of claim 1. Prasad further teaches of means for scheduling an adjustment of an existing flow (page 13 and 15, lines 17-21 and 9-16, “resource availability will be exist or can be created...”).

Regarding claim 3, Prasad teaches all the limitations of claim 1. Prasad further teaches of means for determining time slot utilization by flows and priority violations in real time for existing flows; and means for admitting a new flow based on the total time slot utilization.

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Regarding claim 4, Prasad teaches all the limitations of claim 1. Prasad further teaches of means for determining a threshold for admitting a new EF flow based on a fraction of time slots utilized by all EF flows (page 12, lines 10-24).

Regarding claim 5, Prasad teaches all the limitations of claim 2. Prasad further teaches of

means for determining a threshold for admitting a new AF flow (page 12, lines 10-24).

Regarding claim 7, Prasad teaches all the limitations of claim 2. Prasad further teaches

of means for scheduling an adjustment is determining to terminate an EF flow (paragraphs 19 and 21, lines 11-17 and 15-23, respectively).

Regarding claim 8, Prasad teaches all the limitations of claim 2. Prasad further teaches

of means for scheduling an adjustment is determining to degrade an AF flow to a BE flow (page 18, lines 10-13).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims 6, 9-10, 18-19, 21-22, 26 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad in view of Belenki, Stanislav (Belenki, US Pub. No.: 2002/0,161,914 A1).

Regarding claims 9, 28 and 29, Prasad teaches of a method and computer readable storage medium containing a set of instructions for a processor for information transfer (column 2, lines 6-9, where communications is concerns with information transfer), determining a threshold based on a time slot utilization by flows (page 12, lines 10-24); monitoring the time slot utilization (column 5, lines 10-23, where packet data reservation is done in slots) and admitting a new flow only if the total time slot utilization is below the threshold (page 12, lines 10-24).

Prasad does not specifically teach of priority violations in real time for existing flows; and monitoring the priority violations.

In related art concerning a method and arrangement for congestion control packet networks, Belenki teaches of priority violations in real time for existing flows (paragraph 37); and monitoring the priority violations (paragraph 37, e.g., "sensing violations").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Prasad's flow admission control method with Belenki's monitoring of violations in order to "achieve a stable state of operation", as taught by Belenki.

Regarding claims 6 and 26, Prasad teaches all the limitations of claims 2 and 9, respectively.

Prasad does not specifically teach of means for adjusting a flow is determining too high a utilization based on priority violations among the flows.

Belenki teaches of means for adjusting a flow is determining too high a utilization based on priority violations among the flows (paragraph 7, where when there is violation, some flows are removed, flow is adjusted).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Prasad's flow admission control method with Belenki's adjustment of flow when violations occur in order to "achieve a stable state of operation", as taught by Belenki.

Regarding claim 10, Prasad and Belenki teach all the limitations of claim 9. Prasad further teaches where determining the threshold for admitting a new EF flow is based on a fraction of time slots utilized by all EF flows (page 12 lines 10-24, where a fraction of the slot utilization indicates available bandwidth that can accommodate new users).

Regarding claim 18, Prasad and Belenki teach all the limitations of claim 9.

Belenki further teaches of terminating an EF flow if its packet loss rate exceeds a value for a period of time (paragraph 9, where when degradation of communication remains for some time, it is not worth maintaining).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Prasad's and and Belenki's flow admission control method with Belenki's packet loss rate time in order to maintain a desirable flow control.

Regarding claim 19, Prasad and Belenki teach all the limitations of claim 18.

Prasad and Belenki do not specifically teach where the value is a smoothed drop rate higher than approximately 10%. Belenki further teaches where the value is a smoothed drop rate higher than approximately 10% (paragraph 49, where the admission of a new packet depends on the percentage of lost packets, where more than 10% loss represents considerable degradation of communications, thus, it is preferable to drop the connection).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Prasad's and and Belenki's flow admission control method with Belenki's packet loss rate time in order to maintain a desirable flow control.

Regarding claim 21, Prasad and Belenki teach all the limitations of claim 9. Prasad further teaches of degrading an AF flow to a BE flow if, over a period of time, the AF flow throughput is low compared with a minimum required rate for AF (page 18, lines 10-13).

Regarding claim 22, Prasad and Belenki teach all the limitations of claim 21. Prasad further teaches where the low throughput is a smoothed throughput based on the linear estimation per a number of slots that is lower a percentage of the require rate for longer than a period of time (where a broad interpretation can be given where the low throughput depends on any number of slots and percentage (page 18, lines 10-13).

3. Claims 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad in view of Belenki and further in view of Lee et al. (Lee, US Pub. No.: 2003/0,199,278 A1).

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Regarding claim 11, Prasad in view of Belenki teach all the limitations of claim 10.

Prasad and Belenki do not specifically teach of computing the time fraction based on an average DRC for all new flows.

In related art concerning a serving switching method based on QoS in a mobile communication system, Lee teaches of computing the time fraction based on an average DRC for all new flows (paragraph 39-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Prasad's and Belenki's flow admission control method with Lee's average DRC in order to to assign slots according to QoS and required data rate, as taught by Lee.

Regarding claim 17, Prasad, Belenki and Lee teach all the limitations of claim 11.

Lee further teaches of computing the average DRC for a new AF user from a moving average of the requested DRC during a connection setup (paragraph 39-44, where the average would change depending on the number of readings, the readings depend on time).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Prasad's and Belenki's flow admission control method with Lee's average DRC in order to to assign slots according to QoS and required data rate, as taught by Lee.

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4. Claims 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad in view of Belenki and further in view of Connor, Patrick (Connor, US Pub. No.: 2003/0,128,664 A1).

Regarding claims 20 and 24, Prasad and Belenki teach all the limitations of claims 18 and 22, respectively.

Prasad and Belenki do not specifically teach where the period of time is approximately three consecutive seconds.

In related art concerning a metered packet loss flow for packet switched networks, Connor teaches where the period of time is approximately three consecutive seconds (paragraph 23, where three seconds is a period of time that can provide enough information regarding packet loss in order to make decisions as to maintain or drop a call depending on the number of packets lost).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Prasad's and Belenki's flow admission control method with Connor's assigned period in order to have a quantification of the number of lost frames within a determined period of time.

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad in view of Belenki and further in view of Borst et al (Borst, US Patent No.: 7,006,466 B2).

Regarding claim 23, Prasad and Belenki teach all the limitations of claims 22.

Prasad and Belenki do not specifically teach where the number of slots is approximately 300.

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In related art concerning dynamic rate control methods and apparatus for scheduling data transmissions in a communication network, Borst teaches where the number of slots is approximately 300 (column 16, lines 27-32, where given a broad interpretation, it can be determined 300 slots in a 0.3 period of time).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Prasad's and Belenki's flow admission control method with Borst's number of slots in order to have a quantified number of the throughput.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angelica Perez whose telephone number is 571-272-7885. The examiner can normally be reached on 6:00 a.m. - 1:30 p.m., Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either the PAIR or Public PAIR. Status information for unpublished applications is available through the Private PAIR only. For more information about the pair system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Information regarding Patent Application Information Retrieval (PAIR) system can be found at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service number is 703-306-0377.



3-16-07

Liana N. Le
Primary Examiner
Technology Center 2600



Angelica Perez
Examiner

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March 16, 2007